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Comments: Initial Findings and Draft Recommendations of the Task Force on Improving the National Environmental Policy Act

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January 12, 2006

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Contents

Executive Summary

The findings on NEPA's intent indicate that both environmental NGOs and the regulated industries perceive NEPA as a blunt instrument wielded to prevent development. Federal agencies react by immediately declaring every action as major, when that is neither required nor advisable. A sound technical definition of NEPA is presented, and the appropriate use of the Categorical Exclusion, Environmental Assessment (EA) and Environmental Impact Statement (EIS) is summarized.

The other findings are shown to be related to the subjective nature of determining significance of impacts as well as the other components of a NEPA document. Modifications within the existing NEPA process that quantify subjectivity and remove it as a decision-making factor are published in a book and summarized in these comments.

Comments on specific draft recommendations are made from only the scientific and technical perspective. The Congress is urged to reduce subjectivity by replacing it with objective measures that are technically sound and legally defensible.

1 NEPA Intent and Purpose

From the comments summarized in the draft report it appears that the intent and purpose of NEPA has been distorted to serve vested interests and not clearly understood by those regulatory agency staff assigned responsibility for the preparation of a compliance document.

Stepping back from the emotional involvement that too often accompanies discussions about NEPA, we get a better perspective by looking at the names of the two main compliance documents: environmental assessment (EA) and environmental impact statement (EIS). Furthermore, the two document names address the issue brought forth in hearings of regulatory agencies considering every action to be a "major" one. NEPA directs federal agencies to assess the potential negative impacts of a proposed action. This assessment is reported in an EA. If a finding of no significant impacts (FONSI) is made, then the statute and agency regulations are fulfilled and the assessment process ends there. However, when the EA determines that there is the potential for significant negative impacts, the process continues with an environmental impact statement (EIS). This more comprehensive consideration of the proposed action's effects on the natural, economic, and societal environments is intended to provide a more comprehensive basis for making a decision on whether to allow the action and what that entails.

1.1 Societal Values and Subjectivity

The draft report begins with a brief history of the need for better informed environmental decision-making (page 8). This history illustrates the basis for NEPA: to reflect society's values of the natural world and a desire to maintain desired structure and function while accommodating human population growth, increased quality of life, and demands for essentials such as food, shelter, and increased life span. It was recognition of the shift in societal values more than 35 years ago that resulted in the passage of NEPA, the Clean Water Act, the Endangered Species Act, the Clean Air Act and other environmental statutes. It is both reasonable and practical to declare the intent and purpose of NEPA as reflecting these societal values.

Societal values change over time, and this can readily be accommodated by changing the laws that reflect those values. However, the problem is that values and beliefs are subjective and decisions made subjectively are open to challenge and dispute. The results are shown in the draft report's section on litigation. I will address that issue later.

The subjectivity and values-based statutes are also the factors driving other groups of

comments heard in the public hearings. Addressing delays in the process, enhancing public participation, reducing the potential for litigation, clarifying alternatives analyses, and clarifying the meaning of "cumulative impacts" are all related; a process that addresses all these concerns is summarized below.

1.2 Clarifying NEPA's Purpose

There are two related improvements that can be directed by statute. The first improvement would be to direct federal agencies to focus on the lowest level of compliance and fully address that level before escalating compliance to a higher intensity. For example, when an existing operational permit is to be renewed, and there are no indications of any adverse environmental impacts during the term of the current permit, agencies should be directed to categorically exclude the renewal process from any further processing under NEPA. An appropriate situation where this administrative action should be applied is an electrical transmission line (or natural gas pipeline) across lands administered by the Forest Service or Bureau of Land Management. If the operation has not been subject to any enforcement actions, there is no need to spend the time and money with a new environmental assessment. By definition, a federal action that is known to have no impacts on the environment would be categorically excluded from further NEPA analyses.

The next higher level of compliance is that of the EA. There are many "major" federal actions that tend to not cause significant negative environmental impacts when constructed and operated in accordance with best management practices. Gas turbine, cogeneration power plants near ports or industrial parks fall in this category. So do industrial mineral mines, selective logging of trees in relatively flat terrain, and cattle grazing on grasslands. In these cases the environmental assessment is an ideal tool to ensure that the proposed activity will be done in such a way that has been shown in other situations to have no, minimal, or mitigatable impacts that are much less than the derived benefits.

Both EAs and EISs depend on a technically sound, legally defensible definition of *significance*[1]. This is another decision point that has caused delays, increased costs, and excessive levels of analyses because it is subjective and can be challenged as arbitrary and capricious. There is now a way to convert this subjectivity to objective measurements, and this modern approach to NEPA compliance can satisfactorily resolve most of the issues identified in the draft report.

One of the most meaningful improvements to NEPA's intent and purpose is better training of federal agency staff assigned the responsibilities of directing compliance efforts. These staff need to be very highly trained, and undertake continuous education in the statute, its purpose, and compliance processes, and the industries or other activities they regulate. This training can greatly reduce the time involved in completing a NEPA compliance document, the potential for litigation, and the overall costs.

[1]Cumulative impacts also depend on significance, but this analysis is a part of the other compliance processes.

2 Other Findings

The initial findings in the draft report address public participation, delays, compliance costs, and litigation as separate topics, but they are all related and can be resolved simultaneously. I will address the common factors in this section. The issues of interagency communications and participation, the impacts of changing NEPA, adequacy of agency resources, and NEPA's interaction with other substantive laws are more administrative than they are scientific or technical. I will not comment on these latter issues.

The underlying technical cause inherent in NEPA compliance is subjectivity. Most federal agencies have their own "NEPA Handbooks" which are intended to define the procedures adopted by that agency to implement the law. This variation among agencies and projects is particularly irksome to the natural resource industries because of the values-based subjectivity determining the significance of impacts. This results in the lack of a consistent and predictable objective process addressing the law's intent and requirements.

2.1 Subjectivity

The subjectivity in each phase of a NEPA compliance effort can (and too often is) the basis for legal challenge and litigation based on decisions being arbitrary and capricious.

During the scoping phase of the project, decisions on what components to include in the assessment are often determined by a "technical team of experts." The public who participate by attending the scoping hearings sometimes do not have their values and beliefs incorporated into the decision. This could become the reason for a legal challenge to the process. The result is increased costs and process delay even if it does not register in the legal system. The description of the existing conditions (the baseline environment) is the next phase where subjectivity appears. The data that are collected are certainly objective measurements, but their interpretation is not. The analyses of alternatives is also subjective. Changes in area, number, volume, and other measurements can be established, but whether their impact on the existing conditions is *significant* is usually left to "best professional judgement." Finally, when the decision-maker sits down to draft the Record of Decision he almost always bases his decision on experience and other subjective factors.

Making subjective decisions takes time if there is the intent of being able to defend the choices in a court of law. Extra data might be ordered to bolster the basis for the decision, and this increases costs as well as the time required to complete the process. In addition, when an agency is nervously looking over its shoulder at the environmental NGOs that may decide to sue if they do not agree with the decision, staff and management may delay

even longer.

No one benefits from the inherent subjectivity of NEPA compliance.

2.2 Significance

A full appreciation of how difficult it has been for environmental impact assessment practitioners to adequately address this core concept can follow from a reading *A Review of Methods and Generic Criteria for Determining Significance* by Nigel Rossouw[1]. His abstract describes the problem clearly and effectively:

> "Significance as a concept is at the core of impact identification, prediction, evaluation, and decision-making in Environmental Impact Assessment (EIA) processes. Despite this, there is no international consensus amongst practitioners on an agreed approach for assessing the significance of impacts. Evaluating the significance of environmental impacts is linked to all the phases of the EIA process. ... The current general practice of determining significance is to derive it from a combination of scientific methods and values ascribed by the EIA team. The various stakeholders involved in the EIA process are very seldom afforded an opportunity to relate their concerns, views, and values to determining the significance of impacts. Including stakeholders in the process of determining the significance of impacts represents a serious challenge to the current EIA practice. ... The paper concludes that evaluation of impact significance should include consideration of value judgements and whose values they represent."

The concept of impact significance can be partitioned into eight components that cover ærial extent, duration, timing, and other factors. However, integrating these factors into an overall significance measure cannot be done subjectively. It is because federal agencies have not had any other options that their decisions leave some groups dissatisfied.

When *significance* can be quantified as a set of inter-related aspects, the values can be used to evaluate cumulative impacts.

2.3 Cumulative Impacts

Cumulative impacts is a concept in the same category as biodiversity: it is a great concept that everyone claims to intuitively understand and support, but it cannot easily be applied to the real world. There is no consensus among agencies conducting an environmental assessment whether impacts are cumulative spatially, temporally, or by type. The concept does not automatically accommodate construction impacts (predominately temporary) from operational impacts (of potentially longer duration), nor does it distinguish

[1] African Journal of Environmental Assessment and Management, vol. 6, June 2003, pages 44-61.

between localized effects (for example, heated water into a local wetland) and more far reaching effects (for example, lining a stream channel with concrete to avoid erosion and local flooding). All these uncertainties and different perceptions of what is meant by "cumulative impacts" results in the concept not being addressed in a NEPA document or in dissatisfaction by one group of stakeholders or another with how it is addressed.

Cumulative impacts are another subjective aspect of NEPA compliance. However, cumulative impacts can be evaluated by applying the eight significance components over defined spatial scales and time periods. Seeking overlaps in time and space of impacts to the same environmental components (natural, economic, societal) is an approach to quantifying cumulative impacts that is technically sound and legally defensible.

2.4 Toward A Working Solution

A working solution to the identified deficiencies of the way NEPA compliance is currently done should meet several criteria:

1. It should quantify subjectivity throughout the NEPA process and provide decision-makers with information that permits supportable Records of Decision.

2. It should address all issues and concerns identified in the public hearings by those with widely disparate opinions.

3. It should provide a consistent process, uniform across all agencies, all geographic areas, and all project types while producing results that are specific to each major federal action, its location, and local values.

Such a solution is described, explained, and justified in the book, *Quantifying Environmental Impact Assessments Using Fuzzy Logic*, by Richard B. Shepard[2]. This modern approach applies the robust mathematics of fuzzy sets and fuzzy logic to quantify subjectivity, values, belief systems, sustainability, and highly complex environments. The mathematical foundation supports expert system models based on IF-THEN rules. These approximate reasoning models capture the values of everyone from project supporters to project opponents; regulators, regulated public, society, and the natural environment. They accommodate conflicting opinions (the "dueling scientists" issue that too often frustrates non-scientists) as well as allowing for both unconditional and conditional rules. The details are in the book.

[2]New York: Springer-Verlag. 2005. ISBN: 0-387-24398-7.

3 Draft Recommendations

3.1 Group 1 – Delays in the Process

Recommendation 1.1 – A definition of "major action" would be extremely valuable. In addition, if the use of an Environmental Assessment (EA) was directed to be used in cases of uncertainty, the results would help to identify both "major actions" and the need to continue the assessment process with an EIS.

Recommendation 1.2 – In complex situations where there are insufficient data to support a solid decision, 18 months might not be sufficient. However, for almost all EAs, this is a very reasonable and accommodating period. One addition to this recommendation is to add criteria that regulatory agencies must apply when considering the completeness of an application.

A tactic that can be used by agencies seeking to delay a decision is that of requiring changes or additions to the application before it is considered complete. The clock for the recommended 18-month processing period will most likely not start until the application is considered complete. Agency staff have been known to use this tactic for various reasons.

Recommendation 1.3 should be combined with 1.1 as they address the same issue; Recommendation 1.4 is also in this category of definitions and appropriate use.

Another aspect of these recommendations is the too-often inadequate training of agency staff responsible for the preparation of NEPA documents. There are also instances when individual staffers have their own agenda and use the process to set policy they want, rather than implementing the policies set by Congress. Uniform training standards should be made mandatory. Included in this training should be understanding of the industry (or industries) regulated by that agency and staff. This lack of understanding frequently makes it very difficult to effectively communicate on issues of concern.

3.2 Group 2 – Enhancing Public Participation

These are both worthy recommendations. The page limit would be a boon to everyone involved in NEPA compliance, not just the public. Perhaps, this should be moved to Group 1 as part of the definitions. A potential problem with Recommendation 2.1 is how "localized" is defined in the CEQ regulations. This is another subjective term that could be litigated as a means for delaying a proposed action, or driving up the costs of compliance.

An alternative approach to public participation is one that encourages everyone to express his views and treats them all equally. While doing so, participants are asked to express their general position with regard to the proposed action: supportive, neutral, or in opposition. Views on components to be included in the assessment and the meanings of terms such as "significant," "acceptable," and "cumulative" can be quantified using mathematical techniques, and averaged by each group's position. This produces an average for each group (supporting, neutral, opposing) and it does not matter how many are in each group. The details are in my book, cited above on page 5.

3.3 Group 3 – Better Involvement for State, Local, and Tribal Stakeholders

These two recommendations address administrative issues, not technical ones. Therefore, I have no comments on them.

3.4 Group 4 – Addressing Litigation Issues

It is important to recognize that many litigation issues arise from the subjective nature of environmental impact assessments and from insufficient (or uneven) public participation, particularly during the scoping phase.

Recommendation 4.1 – These are all necessary and welcome clarifications to the statute. The one comment that ought to be revised for clarification is the first one, about the use of best available information and science. I have two concerns with this as it is written. First, "best available" is subjective and does not resolve the underlying issue. Changing that wording to reflect that appellants must establish a credible scientific basis for their challenge will strengthen the result. Second, statutorily exclude the use of terms such as "we think ...," "we believe...," and "we feel..." in any filed appeal. Instead, the appellants must site published scientific research that supports their contention, and show how that research is relevant to the specific environmental assessment.

This is asking no more of appellants than it asks of applicants. No federal agency will accept an applicant's assurance that, "in our best professional judgement, this proposed action will not have any adverse impacts on the natural, economic, or societal environments." The applicant must document this position using measured objective data, citations from high-quality scientific literature, and other sources. The regulations should make it clear that appellants will be held to the same standard. This level playing field will provide consistency and predictability to the NEPA process while ensuring that it is appropriate.

3.5 Group 5 – Clarifying Alternatives Analysis

Most of these recommendations will improve the NEPA process, but they focus more on administrative reform than technical reform. Of the three recommendations, the second is the most important. In almost every assessment, the No Action alternative is assumed to represent no change in the existing conditions. I do not know if this is a cause of too many citizens thinking that nature is static, or a result of that thinking. It is very frustrating to the applicant when an opposition interest group pushes for adoption of the No Action alternative using the argument that it will leave the ecosystem unchanged. Of course it changes over time, and your efforts to recognize that are appreciated.

There are two other aspects of the alternatives analysis phase that can become a source of challenge and/or litigation: unequal consideration of all alternatives, and relating alternative future conditions to the existing conditions.

Because the traditional approach to NEPA compliance relies on subjective, "best professional judgement" of what each alternative produces as an effected environment the process takes a lot of time and consumes a lot of paper when written up and justified. As noted in Recommendation 5.2, the No Action alternative is mentioned, but not further considered. Most attention is devoted to the preferred alternative, and the one or two others are given cursory consideration. This is an unsatisfactory situation which can be remedied by characterizing environments with weights proportional to the importance of assessment components (which should be established during scoping). When this is done, it is trivial to compare alternative future environments with the existing ones. How to do this is detailed in my book (*op cit*) and demonstrated in the book's third part, where a worked example is explained in detail.

Briefly, these improvements can be achieved by engaging the public in determining what is considered "acceptable" and representing that by a membership curve of a fuzzy set. This is done for each component included in the assessment. The measured values of the existing conditions, and the projected ones of the alternatives, are converted to degrees of membership in those fuzzy sets and combined by the mathematical technique of symmetric summation. The result is a number between 0.0—1.0 that represents an *Environmental Condition Index* (ECI). All alternatives are considered by the same process–including the No Action alternative–and the decision-maker has a set of numbers along the same scale that compare all alternatives among themselves and to the existing conditions. This results in a higher quality NEPA process result that is technically sound and legally defensible, can be completed in less time and at lower overall costs than is currently done.

3.6 Group 6 – Better Federal Agency Coordination

These two recommendations are administrative, not technical, so I have no comments.

3.7 Group 7 – Additional Authority for the CEQ

These two recommendations are administrative, not technical, so I have no comments.

3.8 Group 8 – Clarify Meaning of "Cumulative Impacts"

These two recommendations should be included with the other definitions presented in Group 1.

Recommendation 8.1 – The intent of this recommendation is not clear for two reasons. First, the recommendation suggests that the current environmental conditions integrate all past activities, but that provides neither a measure of the "goodness" of the existing conditions, nor a means of integrating the projected effects of one or more proposed actions on the existing conditions. Second, the context I have heard most frequently when cumulative impacts are discussed focus on the effects of the action being considered in light of other existing activities, and the additional impacts of future activities. This meaning of cumulative impacts is not clearly expressed.

Unless the existing conditions are assigned a quantitative measure of desirability, goodness, acceptability, or other value term, they cannot be used for comparison with past or future conditions. In addition, past conditions cannot be undone, so a proposed action might be structured in such a way as to reverse some of the then-unforeseen negative impacts that produced the current environment; beneficial changes that would not occur if the action is not undertaken.

If cumulative impacts are evaluated using the eight significance criteria then there is both a quantitative basis for the evaluation, and a consistent method with a sound scientific base. Such an approach would permit a technically sound and legally defensible assessment of the cumulative effects of, for example, a marine terminal, a fossil-fuel electrical generating plant, the creation of a large industrial park, a liquefied natural gas (LNG) terminal, and additional rail and truck traffic, all within a narrow coastal plain adjacent to an ocean.

Recommendation 8.2 – This is a large improvement over the inherently vague "reasonably foreseeable." The cumulative effects of actions already undertaken, in the assessment process, or known to be proposed in the immediate future should still be evaluated using the quantitative measures of significance. Without this quantification the potential for appeal remains very high because subjectivity is always subject to interpretation.

3.9 Group 9 – Studies

These three recommendations are administrative, not technical, so I have no comments.